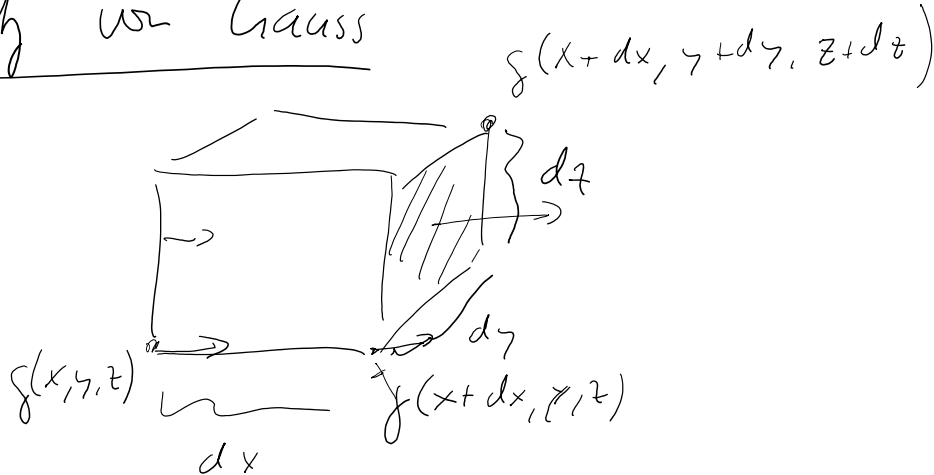


Satz von Gauss



$$d\Phi_x = \underbrace{(f(x+dx) - f(x))}_{dA} \cdot \underbrace{dx dy dz}_{dV} = \underbrace{\frac{f(x+dx) - f(x)}{dx}}_{\frac{dg}{dx}} \cdot dV$$

$$d\Phi = \left(\frac{\partial f_x}{\partial x} + \frac{\partial f_y}{\partial y} + \frac{\partial f_z}{\partial z} \right) dV$$

$\vec{\nabla} \cdot \vec{f}$: Divergent

$$\int \vec{f} \cdot d\vec{A} = \underbrace{4\pi \Gamma M}_{\int \rho dV} \text{ eigentl.} = \int \vec{\nabla} \cdot \vec{f} \cdot dV$$

$$\Rightarrow \vec{\nabla} \cdot \vec{f} = 4\pi \Gamma \rho$$